APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,939	05/09/2001	Tina Abrahamsson	20184000300	5823

20350   7590   03/16/2005

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EXAMINER
PHAN, MAN U

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 May 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5,6,8-10,12 and 14-20* is/are rejected.

7)☒ Claim(s) *2-4,7,11 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   The application of Abrahamsson et al. for a "Transmission over packet switched networks"

filed 05/09/2001 has been examined. This application claims foreign priority based on the

application SE 0001727-7 filed May 10, 2000 in Sweden. Receipt is acknowledged of papers

submitted under 35 U.S.C 119(a) – (d), which papers have been placed of record in the file.

Claims 1-20 are pending in the application.

Claim Rejections - 35 USC ' 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly

claiming the subject matter which the applicant regards as his invention.

        Claim 9 recites the limitation "the digitized sound samples" in line 4, and "the generated

prediction samples" in line 8. There is insufficient antecedent basis for these limitations in the

claims.

        Claim 10 recites the limitation "the diversity" in line 2. There is insufficient antecedent

basis for these limitations in the claims.

        Claim 18, line 10: "the second description" should read –the second segment description-

-. Correction is required.

Claim Rejections - 35 USC ' 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
>
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
>
> art are such that the subject matter as a whole would have been obvious at the time the invention was made
>
> to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
>
> negatived by prior art under 35 U.S.C. 103(a).

This application currently names joint inventors. In considering patentability of the claims

under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims

was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 1038

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4.   Claims 1, 5, 6 and 10, 12 and 16-18 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Craven et al. (US#6,611,212) in view of Andrsen et al. (US#2003/0167170).

In sofar as understood, with respect to claims 1, 5, 6, 10, 12 and 18, Craven et al.

(US#6,611212) and Andrsen et al. (US#2003/0167170) disclose a method of encoding/decoding

digitized sound signal packets, according to the essential features of the claims. Craven discloses

a method of coding digital audio signals utilizing lossless encoding and decoding. Craven

discloses in Fig. 1 a block diagram iilustrated a lossless six channel encoder, in which a stream is

divided into two substreams, the first substream providing information relating to a `downmix`

signal obtained by matrixing and containing fewer channels than an original multichannel digital

signal, and the second substream providing additional information allowing the original

multichannel digital signal to be losslessly recovered by a decoder. In a preferred

implementation, an encoder furnishes the downmix signal using a cascade of one or more

primitive matrix quantizers, each of which implements an n-by-n matrix, followed by selection

of the m channels required for the downnix. In a second aspect, a lossless compression system

includes a dither seed in the encoded bitstream. The dither seed is used to synchronize a pseudo-

random sequence generator in the decoder with a functionally identical generator in an encoder.

In a third aspect, encoders and decoders contain uncommitted primitive matrix quantizers, the

encoder having logic that accepts a downmix specified as a matrix of coefficients, allocates a

number of primitive matrix quantizers to furnish the downmix and optionally allocates a further

number to provide matrixing to reduce the data rate (Col. 1, lines 66 plus and Col. 24, lines 9

plus).

However, Craven et al. does not expressly disclose whether transmissions of two

different sound segment is offset by a predefined time interval. In the same field of endeavor,

Andrsen et al. teaches a system and method for audio decoding of received sound data packets in

systems for transmission of sound over packet switched networks. Andrsen teaches in Fig. 1 a

block diagram of the transmitting part of a system for transmission of sound over a packet

switched network. The sound is picked up by a microphone 10 to produce an electric signal 15,

which is sampled and quantized into digital format by an A/D converter 20. The sample rate of

the sound signal is a rate that is adequate for the bandwidth of the signal and is typically 8, or 16

kHz for speech signals and 32, 44.1 or 48 kHz for audio signals. The quantization accuracy of

the digital representation is an accuracy that is adequate for the desired quality of the

transmission, and is typically 7 or 8 bit A- or .mu.-law quantization, or, 13 or 16 bit uniform

quantization. Alternatively, the A/D converter 20 is of the oversampled differential quantization

type. The sampled signal 25 is input to a sound encoder 30. The sound encoder 30 produces data

packets 35 with fixed or variable rate and with fixed or variable size. These data packets contain

sufficient information for an adequate sound decoder to reproduce a sound signal that is a

sufficient-quality reproduction of the original sound signal. The controller 40 adds sequencing

and destination address information to these packets, resulting in new data packets 45 suitable

for transmission over a packet switched network [0072]. Furthermore, In the embodiment

illustrated in Fig. 2, a sound decoder 70 decodes data packets 65 into signal frames 75, i.e., fixed

length segments of the decoded sound signal. These signal frames 75 are input to the combined

timing recovery and lost frame substitution 80. The sound decoder 70 works as a translator

through which the timing recovery and lost frame substitution 80 can access data from the jitter

buffer 60 in the form of a signal frame 75. That is, the timing recovery and lost frame

substitution 80 makes a frame demand 76 from the sound decoder 70. This causes the sound

decoder to make a packet demand 67 from the jitter buffer 60. The jitter buffer 60 extracts a data

packet 65 and sends it to the sound decoder 70, which decodes it, and returns it as a signal frame

75 [0074]-[0075].

With respect to claims 16-17, These claims differ from claims of Attimont in view of Andrsen in that the claims recited a computer program product for performing the same basis of steps and apparatus of the prior arts as discussed in the rejection of claims 1, 10 and 18 above. It would have been obvious to a person of ordinary skill in the art to implement a computer program product in Lin in view of Fuchigami for performing the steps and apparatus as recited in the claims with the motivation being to provide an efficient enhancement to the encoding/decoding of digital samples in packet switched network, and easy to maintenance, upgrade.

One skilled in the art would have recognized the need for effectively and efficiently encoding/decoding of digital samples of speech signal using filtering process, and would have applied Andrsen's combined timing recovery and lost frame substitution on the decoded signal frame packets into Craven's novel use of lossless encoding and decoding of digital signal streams. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Andrsen's method and arrangement in a communication system into Craven's matrix improvements to lossless encoding and decoding with the motivation being to provide a method and system for encoding/decoding of digital signal in a packet switched network.

5.   Claims 8-9, 14-15 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craven et al. (US#6,611,212) in view of Andrsen et al. (US#2003/0167170) as applied to the claims above, and further in view of Craven et al.(US#6,664,913).

With respect to claims 8-9, 14-15 and 19-20, Craven et al. and Andrsen et al. disclose the claimed limitations discussed in paragraph 4 above. However, Craven et al. and Andrsen et al. do not expressly disclose the quantizing digitized sound samples, generating prediction samples, and de-quantization of of the quantized digital samples resulting from the lossless decoding. In the same field of endeavor, Craven et al. (US#6,664,913) teaches a method of lossless processing of an integer value signal in a prediction filter which includes a quantiser, a numerator of the prediction filter is implemented prior to the quantiser and a denominator of the prediction filter is implemented recursively around the quantiser to reduce the peak data rate of an output signal. In the lossless processor, at each sample instant, an input to the quantiser is jointly responsive to a first sample value of a signal input to the prediction filter, a second sample value of a signal input to the prediction filter at a previous sample instant, and an output value of the quantiser at a previous sample incident. In a preferred embodiment, the prediction filter includes noise shaping for affecting the output of the quantiser (See Fig. 2 and Col. 3; Lines 45 plus).

One skilled in the art would have recognized the need for effectively and efficiently encoding/decoding of digital samples of speech signal using filtering process, and would have applied Craven's novel use of lossless coding and decoding utilizing lossless prediction and matrixing, and Andrsen's combined timing recovery and lost frame substitution on the decoded signal frame packets into Craven's teaching of lossless encoding and decoding of digital signal streams. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Craven's lossless coding mthod for waveform data, and Andrsen's method and arrangement in a communication system into Craven's matrix

improvements to lossless encoding and decoding with the motivation being to provide a method

and system for encoding/decoding of digital signal in a packet switched network.

Allowable Subject Matter

6.   Claims 2-4, 7, 11 and 13 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

7.   The following is an examiner's statement of reasons for the indication of allowable subject

matter: The closest prior art of record fails to disclose or suggest a step of grouping several

segment descriptions of several different sound segments together in one and the same data

packet, wherein each segment description of the data packet describes a sound segment in

accordance with a corresponding sound signal description, as specifically recited in the claims 2-

4, and 11. The prior art of record fails to disclose or suggest a step of transcoding an n-bit PCM

representation bitstream to at least two representation bitstreams, each of the at least two

representation bitstreams being represented by fewer than n bits and being a description of the

sound signal with a respective set of quantization levels, as recited in claims 7 and 13.

8.   Any comments considered necessary by applicant must be submitted no later than

the payment of the issue fee and, to avoid processing delays, should preferably accompany the

issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Craven et al. (US#6,774,820) is cited to show the matrix improvements to lossless encoding and decoding.

The Craven et al. (US#6,784,812) is cited to show the lossless coding method for waveform data.

The Craven et al. (US#2005/0007262) is cited to show the matrix improvements to lossless encoding and decoding.

The Attimont et al. (US#2001/0005365) is cited to show the method of facilitating the playback of speech signals transmitted at the beginning of a telephone call established over a packet exchange network, and hardware for implementing the method.

The Attimont et al. (US#2001/0012993) is cited to show the coding method facilitating the reproduction as sound of digitized speech signals transmitted to a user terminal during a telephone call set up by transmitting packets, and equipment implementing the method.

The Heo (US#6,477,501) is cited to show the real time lossless encoding and decoding system by moving excess data amounts, and a method therefor.

The Heo (US#6,546,370) is cited to show the recording medium with audio data from coder using constant bitrate real time lossless encoding by moving excess data amounts.

The Yasunaga et al. (US#6,415,254) is cited to show the sound encoder and sound

decoder.

10.   Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231 *or faxed to*:

(703) 308-9051, (for formal communications intended for entry) *or:*

(703) 308-5399, (for informal or draft communications, please label "PROPOSED" or

"DRAFT"

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystals Drive,

Arlington, VA., Sixth Floor (Receptionist).

11.   Any inquiry concerning this communication or earlier communications from the examiner

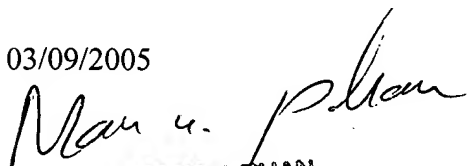should be directed to M. Phan whose telephone number is (571) 272-3149.

The examiner can normally be reached on Mon - Fri from 6:00 to 3:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy

Vu, can be reached on (571) 272-3155. The fax phone number for the organization where this

application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (571) 272-2600.

MPhan

03/09/2005

MAN U. PHAN
PRIMARY EXAMINER